

**PROCESS FOR MAKING TRIAZINE UV ABSORBERS USING LEWIS ACIDS
AND REACTION PROMOTERS**

CROSS REFERENCE TO RELATED APPLICATIONS

- 5 This application is a divisional application of copending United States application No. 09/442,000 filed on November 17, 1999, ^{new US Patent No. 6,480,316} the content of which is expressly incorporated herein.

FIELD OF THE INVENTION

- 10 This invention relates to a novel, highly efficient and general process for making 2-(2-oxyaryl)-4,6-bisaryl-1,3,5-triazines class of trisaryl-1,3,5-triazine UV absorbers and their precursors, 2-halo-4,6-bisaryl-1,3,5-triazines, from cyanuric halide. More specifically, the invention relates to a novel process for the synthesis of triazine compounds in the presence of a reaction facilitator comprising at least one Lewis acid and at least one reaction
- 15 promoter. The process includes the reaction of a cyanuric halide with substituted or unsubstituted aromatic compounds to produce 2-halo-4,6-bisaryl-1,3,5-triazine compounds. This process produces halo-bisaryl-1,3,5-triazine compounds in higher yields than are possible using present methods. The triazine compounds that are produced are precursors of triazine UV absorbers which are used to stabilize organic materials against damage by
- 20 light, heat, oxygen, or other environmental forces. The process of producing such UV absorbers can be carried out step-wise or continuously in an one-pot reaction process.

BACKGROUND OF THE INVENTION

- Triazine UV absorbers are an important class of organic compounds which have a
- 25 wide variety of applications. One of the most important areas of applications is to protect and stabilize organic materials such as plastics, polymers, coating materials, and photographic recording material against damage by light, heat, oxygen, or environmental forces. Other areas of applications include cosmetics, fibers, dyes, etc.

- Triazine derived UV absorbers are a class of compounds that typically include at
- 30 least one 2-oxyaryl substituent on the 1,3,5-triazine ring. Triazine based UV absorber compounds having aromatic substituents at the 2-, 4-, and 6-positions of the 1,3,5-triazine ring and having at least one of the aromatic rings substituted at the ortho position with a hydroxyl group or blocked hydroxyl group are generally preferred compounds.